

HERBICIDE-RESISTANT CORN FOR REDUCING USE OF RESIDUAL
HERBICIDES AND FOR WIRESTEM MUHLY CONTROLRussell R. Hahn
Department of Crop and Soil Sciences

INTRODUCTION

The introduction of corn hybrids resistant to the non-selective, non-residual herbicides, Liberty (glufosinate) and Roundup Ultra (glyphosate) has the potential to reduce the use of residual herbicides and to provide new control options for hard-to-control perennial weeds. There are questions about potential yield losses associated with total postemergence weed control programs. With Roundup Ready soybeans, there is a large window for application, as long as 5 weeks after planting, before yield losses occur. There is also no evidence that residual herbicides are needed with these weed control programs in soybeans. On the other hand, there is evidence that timing of these postemergence control programs is critical for corn and there are mixed opinions about the need for residual herbicides with corn in the northeast. If weed control results and corn yields with no residual or reduced rates of residual herbicides with Liberty and Roundup Ultra are equal to or better than those with standard preemergence (PRE) programs, there would be a major reduction in the use of soil-applied herbicides that have the potential to contaminate surface and groundwater. Determining whether residual herbicides are needed in these postemergence programs and demonstrating the importance of timely application in corn will have a major impact on the acceptance of these programs by corn growers.

Wirestem muhly [*Muhlenbergia frondosa* (Poir.) Fern.] is a warm-season, perennial grass for which there have been no good control recommendations in field corn. As a result, it has become increasingly problematic, especially in reduced-tillage systems. Although the sulfonylurea herbicides Accent (nicosulfuron) and Beacon (primisulfuron), which are ALS (acetolactate synthase) inhibitors, are used for this weed, the level of control is inadequate. In addition, there is evidence that ALS resistant weed populations can develop in as little as four growing seasons with repeated use of sulfonylurea herbicides. The introduction of herbicide resistant corn hybrids could result in control recommendations for this perennial grass that would involve the use of environmentally and toxicologically friendly herbicides like Roundup Ultra and Liberty which have sites-of-action that are different from the sulfonylurea herbicides. Documenting the value of these non-selective herbicides for control of this perennial grass would clearly benefit New York corn growers. This in turn would minimize the use of the sulfonylurea herbicides and the risk of developing ALS resistant weed populations.

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IPM House
630 W. North St.
New York State Agricultural Experiment Station
Geneva NY 14456
315-878-2353